Fig. 8

Fig. 8 Experimental waveforms of the SEPIC converter. Ch2: switch voltage stress, 50V/div; Ch3: input voltage, 10V/div; Ch4: input current, 0.5A/div.
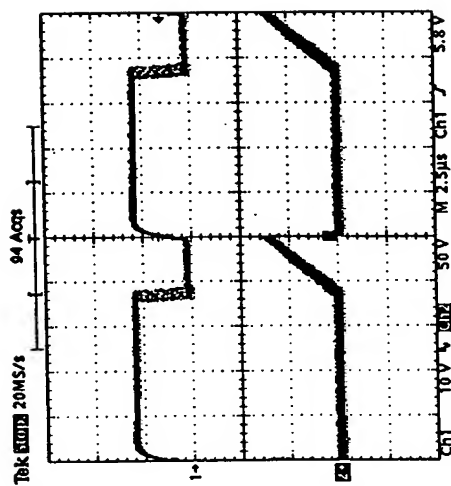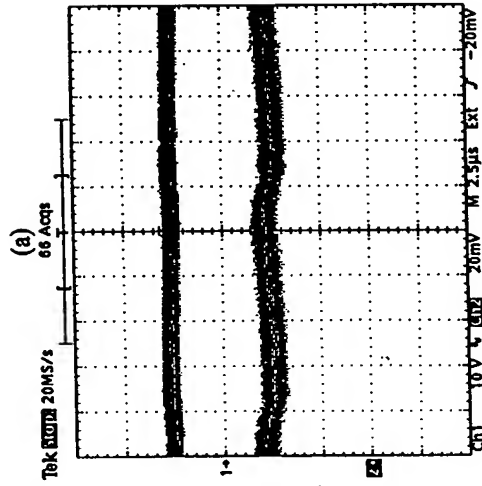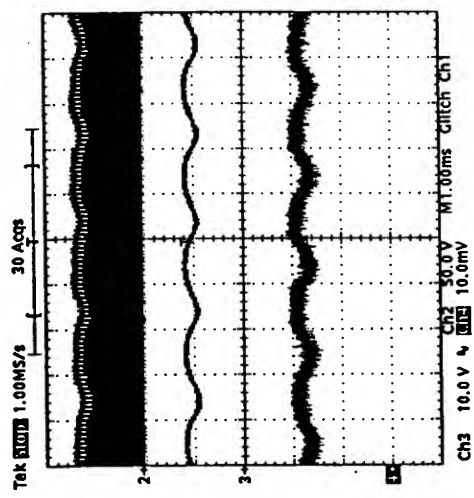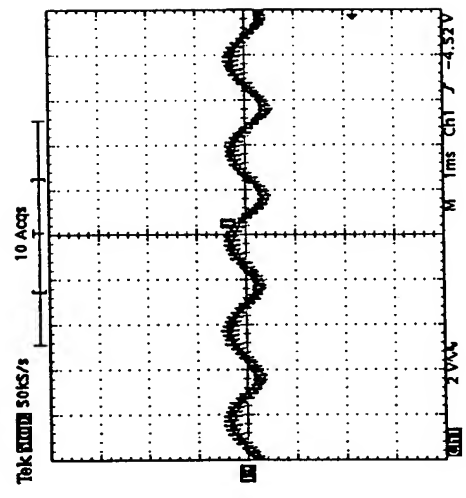
Fig. 9(a)

(a)

Fig. 7 Detailed experimental waveforms of the SEPIC converter. (a) Ch1: gate signal, 10V/div; Ch2: switch voltage stress, 50V/div. (b) Ch1: input voltage, 10V/div; Ch2: input current, 0.5A/div.
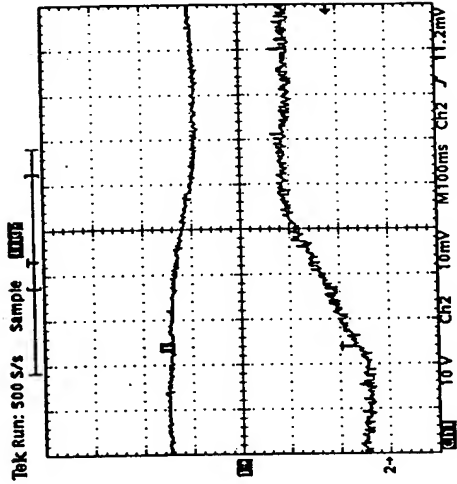
(a)

(b)

Fig. 10 Transient waveforms of the SEPIC converter subject to P_{lamp} changed from 500W to 900W. Ch1: input voltage, 10V/div. Ch2: input current, 0.5A/div.
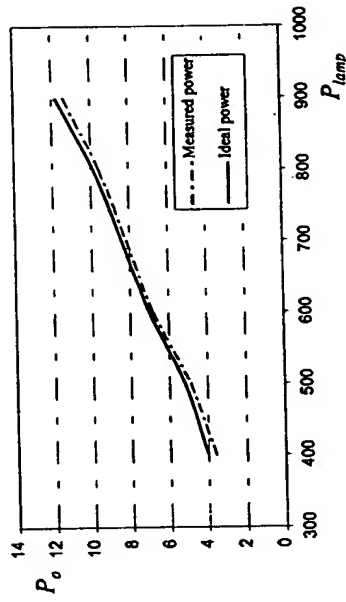
Fig. 11 Comparison of maximum solar panel output power using proposed method and the ideal ones in Fig. 6(b), under different P_{lamp}.
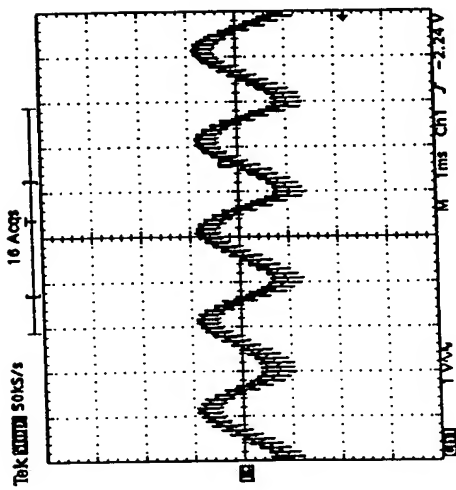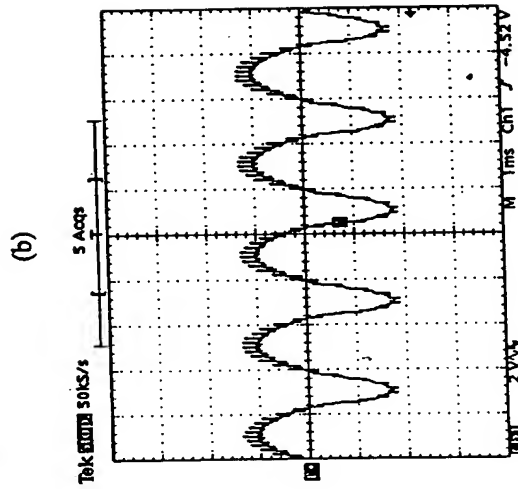
Fig. 9(b)

(b)

Fig. 9(c)

(c)

Fig. 9 Waveform of $\delta\tilde{v}_i$ with respect to different value of $\Re$. (a) $\Re = 0.02$. (b) $\Re = 0.05$. (c) $\Re = 0.1$.